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09/866,853	05/30/2001	Kazuo Tamura	KOJIM-401	7262

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EXAMINER	
SHEEHAN, JOHN P	

ART UNIT	PAPER NUMBER
1742	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/866,853	Applicant(s) TAMURA ET AL.	
	Examiner John P. Sheehan	Art Unit 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 May 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 6-18* is/are pending in the application.

4a) Of the above claim(s) *9,10,15 and 16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,6-8,11-14,17 and 18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *7*.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Election/Restrictions

Applicant's traversal of the election by original presentation is acknowledged. The traversal is on the ground(s) that product by process claims 9, 10, 15 and 16 are dependent on the process claims and "that the search for the method would substantially encompass the search for the restricted subject matter and the allowability of the examined method claims would dictate allowability of products prepared by such method' and "thus, no serious burden of additional search or examination is seen". This is not found persuasive because to examine both product and process claims, even if, as in the instant case the product is claimed as a product by process, requires additional searching of the claimed product. Further, contrary to applicants allegation, it does not follow "that the allowability of the examined method claims would dictate allowability of products prepared by such method", because process limitations recited in product by process claims do not necessarily lend patentability to the claimed product, MPEP 2113. Accordingly, examination of both the process and product by process claims in this application would place additional burden on the Examiner in the search that is necessary and the examination and prosecution of two inventions in a single application. Additionally, applicants have not controverted the Examiner's positions in the statement of the restriction, that; (1) in the instant case the product as claimed can be made by another and materially different process such as for example,

a process wherein the cut and/or polished magnet is not heat treated instead of the claimed process wherein the cut and/or polished magnet is heat treated in an oxygen containing atmosphere as recited in the instant claims and (2) a product defined by the process by which it can be made is still a product claim (In re Bridgeford, 149 USPQ 55 (CCPA 1966)) can be restricted from the process, See In re Brown, 173 U.S.P.Q 685, and In re Fessmann, 180 U.S.P.Q. 324, for analysis of weight given to process step recitations in product claims.

The requirement is still deemed proper and is therefore made FINAL.

This application contains claims 9, 10, 15 and 16 drawn to an invention nonelected with traverse in Paper No. 8. A complete reply to the final rejection must include cancelation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3, 7, 11, 13 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imaizumi et al. (Imaizumi, US Patent No. 4,902,357) taken in view of Ohashi et al. (Ohashi, US Patent No. 4,992,234).

Imaizumi teaches a method of making a sintered rare earth-transition metal-boron permanent magnet having a composition that appears to overlap the alloy composition recited in the instant claims (column 1, lines 61 to 65 and each of the Examples). Imaizumi's method comprises crushing a rare earth-transition metal-boron alloy, compacting the alloy powder in a magnetic field, sintering the powder compact, machining the sintered compact and heat treating the machined compact in an atmosphere having an oxygen partial pressure of 10^{-8} to 1 Torr (column 2, lines 1 to 20, also see each of the Examples in this reference). The heat treatment in an atmosphere having an oxygen partial pressure of 10^{-8} to 1 Torr creates an oxide surface layer on the magnet which improves the corrosion resistance of the magnet (column 2, lines 40 to 45). Imaizumi teaches specific examples wherein the heat treatment in the oxygen containing atmosphere lasts 30 minutes (column 3, lines 10 and 59), which is encompassed by the instant claims.

Ohashi teaches a method of making sintered rare earth-iron-boron magnets. Ohashi teaches that rare earth-iron-boron alloys are highly susceptible to oxidation in air and that it has been conventional practice to pulverize the rare earth-iron-boron alloy in a non-oxidizing atmosphere or inert gas such a nitrogen, argon or the like (column 1, lines 58 to 63).

> "In respect of the oxidation of the R-Fe-B alloys or, in particular, fine powders of such an alloy in the atmospheric air, it is a conventional practice that pulverization of the alloy ingot into powders is conducted in an atmosphere of non-oxidizing or inert gas such as nitrogen, argon and the like or in an organic solvent such as n-hexane and the like." (emphasis added by the Examiner).

Imaizumi and the claims differ in that Imaizumi does not teach the exact same alloy composition, the same heat treatment times and partial pressures and is silent with respect to the magnetic properties of the intermediate product and the use of crushing the rare earth-iron-boron alloy in an oxygen-free atmosphere.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because Imaizumi's alloy composition and the heat treatment times and partial pressures overlap the claims, thereby establishing a prima facie case of obviousness, In re Malagari, 182 USPQ 549 and MPEP 2144.05. Further, with respect to the magnetic properties of the intermediate product it is the Examiner's position that in view of the fact that Imaizumi's alloy composition overlap the alloy composition recited in the claims and is made by a process which is the same as recited in the instant claims one of ordinary skill in the art would expect that Imaizumi's intermediate would have the same properties as applicants' intermediate product.

> "Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, In re Best, 195 USPQ 430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.' In re Spada,15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best,195 USPQ 430, 433 (CCPA 1977)." see MPEP2112.01.

Further, with respect to crushing the rare earth-iron-boron alloy in an oxygen-free atmosphere, it is the Examiner's position that although Imaizumi is silent in this regard this is purely a conventional procedure as taught by Ohashi.

3. Claims 2, 6, 8, 12, 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takebuchi et al. (Takebuchi, US Patent No. 5,595,608) in view of the combination of Imaizumi et al. (Imaizumi, US Patent No. 4,902,357) and Ohashi et al. (Ohashi, US Patent No. 4,992,234).

Takebuchi teaches making sintered rare earth-transition metal-boron permanent magnets using a two alloy powder mixture (column 4, lines 9 to 14) wherein the composition of the alloy powders overlap the alloy powders recited in the instant claims (column 3, lines 8 to 30 and column 5, lines 14 to 33) and the powders are formed by pulverizing an alloy ingot using hydrogen decrepitation (column 5, line 63 to column 6, line 5).

Imaizumi teaches a method of making a sintered rare earth-transition metal-boron permanent magnet. Imaizumi's method comprises crushing a rare earth-transition metal-boron alloy, compacting the alloy powder in a magnetic field, sintering the powder compact, machining the sintered compact and heat treating the machined compact in an atmosphere having an oxygen partial pressure of 10^{-8} to 1 Torr (column 2, lines 1 to 20, also see each of the Examples in this reference). The heat treatment in an atmosphere having an oxygen partial pressure of 10^{-8} to 1 Torr creates an oxide surface layer on the magnet which improves the corrosion resistance of the magnet (column 2, lines 40 to 45). Imaizumi teaches specific examples wherein the heat

treatment in the oxygen containing atmosphere lasts 30 minutes (column 3, lines 10 and 59), which is encompassed by the instant claims.

Ohashi teaches a method of making sintered rare earth-iron-boron magnets. Ohashi teaches that rare earth-iron-boron alloys are highly susceptible to oxidation in air and that it has been conventional practice to pulverize the rare earth-iron-boron alloy in a non-oxidizing atmosphere or inert gas such a nitrogen, argon or the like (column 1, lines 58 to 63).

> ``In respect of the oxidation of the R-Fe-B alloys or, in particular, fine powders of such an alloy in the atmospheric air, it is a conventional practice that pulverization of the alloy ingot into powders is conducted in an atmosphere of non-oxidizing or inert gas such as nitrogen, argon and the like or in an organic solvent such as n-hexane and the like." (emphasis added by the Examiner).

Takebuchi and the claims differ in that Takebuchi does not teach heat-treating the sintered magnet in an oxygen-containing atmosphere and is silent with respect to crushing the rare earth-iron-boron alloy in an oxygen-free atmosphere.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because one of ordinary skill would have been motivated to apply Imaizumi's heat treatment to Takebuchi's sintered magnet in an oxygen-containing atmosphere so as to improve the corrosion resistance of the finished magnet.

Further, with respect to crushing the rare earth-iron-boron alloy in an oxygen-free atmosphere, it is the Examiner's position that as taught by Ohashi this is conventional.

Response to Arguments

4. Applicant's arguments filed May 9, 2003 have been fully considered but they are not persuasive.

5. The rejections set forth in this Office action are each based on a combination of references. It is noted that in response to these rejections applicants have not presented arguments regarding the combination of references but rather have argued against each of the references individually. These arguments are not persuasive in that, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986), MPEP 2145 (IV).

Applicants' argument that Imaizumi does not teach a sintered magnet having a low oxygen concentration of up to 0.8% by weight is not persuasive. In like manner to the magnetic properties of the intermediate product, it is the Examiner's position that in view of the fact that Imaizumi's alloy composition overlap the alloy composition recited in the claims and is made by a process which is the same as recited in the instant claims one of ordinary skill in the art would expect that Imaizumi's intermediate would have the same properties as applicants' product, including a low oxygen concentration of up to 0.8% by weight.

> "Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, In re Best, 195 USPQ 430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the products of the applicant and the prior art

> are the same, the applicant has the burden of showing that they are not.' In re Spada,15 USPQ2d 1655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best,195 USPQ 430, 433 (CCPA 1977)." see MPEP2112.01.

Applicants argue that Imaizumi, although teaching the possibility of a solely nitrogen atmosphere, does not recognize the advantages of a nitrogen atmosphere over oxygen atmosphere in the final heat treating step and in fact shows a preference to an oxygen containing atmosphere. Applicants note that all of Imaizumi's examples are directed to "an oxygen or partial oxygen atmosphere". The Examiner is not persuaded. Applicants' claim language, "having an oxygen partial pressure of 10^{-6} to 10^{0} torr" does not preclude the presence of oxygen in the final heat treatment atmosphere. Further, the claimed oxygen partial pressure overlaps the oxygen partial pressure taught in each of Imaizumi's Examples 3 and 4.

Applicants state that they have discovered that the exclusion of oxygen leads to advantageous magnets and refer to Example 1, Comparative Examples 1 and 2 and Figures 1 and 2 of the instant specification. Applicants point out that in Example 1 the heat treatment is in an argon atmosphere that results in improved magnetic properties and corrosion resistance. The Examiner is not persuaded. First, it is pointed out that in Example 1 the heat treatment atmosphere is not argon but rather an argon atmosphere containing oxygen at a partial pressure of 10^{-5} Torr (specification, page 9, line 15) which is encompassed by Imaizumi's oxygen partial pressure of 10^{-8} to 1 Torr (column 2, lines 1 to 11). The data that applicants have referred to is directed to only

one example of the claimed invention. In view of this, the data referred to by applicants is not considered to be commensurate in scope to the claims, In re Dill 202 USPQ 805. General superiority cannot be inferred from the results obtained using a single embodiment of the claimed invention, In re Greenfield, 197 USPQ 227, 230. Further, applicants' comparison does not compare the claimed invention to the closest known prior art, Imaizumi, MPEP 716.02(e).

Applicants referring to Imaizumi's Example 6 and Figure 2 assert that "Imaizumi notes approvingly the formation of rust layer on its magnets' surface" (applicants' response, page 8, last 5 lines). The Examiner is not persuaded. Imaizumi's Example 6 and Figure 2, referred to by applicants, are silent with respect to rust except to say that, "almost no rust was noted" (column 5, lines 11 and 12) on the tested magnets treated by Imaizumi's method. Further, in view of applicants' claims 15 and 16 (withdrawn from consideration by the Examiner, by constructive election) which recite the presence of oxides it appears that applicants' process produces an oxide or rust layer.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P. Sheehan whose telephone number is (703) 308-3861. The examiner can normally be reached on T-F (6:30-5:00) Second Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (703) 308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.

John P. Sheehan
Primary Examiner
Art Unit 1742

jps
July 18, 2003